

What is claimed is:

- 1           1.     A night vision apparatus comprising:  
2                 means for positioning the apparatus with a portion of the apparatus  
3     adjacent an eye of said user;  
4                 a solid state imager mounted on said positioning means and having an  
5     operating mode having substantial sensitivity to infrared radiation, said solid state imager  
6     having a field of view;  
7                 infrared radiation generation means mounted on said positioning means  
8     and arranged to generate infrared radiation and to direct such radiation into the field of  
9     view of said solid state imager; and  
10                image generation means mounted on said positioning means and arranged  
11     to receive an output from said solid state imager and to generate a visible image  
12     representative of said output at a position visible to the said eye of said user.
2.     A night vision apparatus according to claim 1 wherein said solid  
state imager is a complementary metal oxide semiconductor device.
3.     A night vision apparatus according to claim 1 wherein said solid  
state imager is sensitive to infrared radiation in the range of about 700 to about 1000 nm.
4.     A night vision apparatus according to claim 1 wherein said solid  
state imager is also sensitive to visible radiation in the range of about 400 to about 700  
nm.
5.     A night vision apparatus according to claim 1 wherein said infrared  
radiation generation means comprises at least one infrared radiation emitting diode.
6.     A night vision apparatus according to claim 5 wherein said infrared  
radiation generation means comprises at least two infrared light emitting diodes, at least  
one of said diodes being arranged to illuminate a wide area of the field of view of the solid

state imager and at least one of said diodes being arranged to illuminate a narrower area adjacent the center of said field of view.

7. A night vision apparatus according to claim 5 further comprising a lens arranged to collect infrared radiation and to focus said radiation on said solid state imager, and wherein said infrared radiation generation means comprises at least three radiation emitting diodes arranged on a circle surrounding said lens.

8. A night vision apparatus according to claim 1 wherein said image generation means comprises a backlit liquid crystal display.

9. A night vision apparatus according to claim 8 wherein said liquid crystal display is mounted between said solid state imager and said user so that the backlight of said liquid crystal display is not visible except to said user.

10. A night vision apparatus according to claim 8 wherein the backlight of said liquid crystal display is provided by a light emitting diode and a diffuser is provided to diffuse the light from said diode across said liquid crystal display.

11. A night vision apparatus according to claim 10 wherein said light emitting diode emits green light.

12. A night vision apparatus according to claim 8 further comprising an eyepiece lens disposed adjacent said liquid crystal display, said eyepiece lens lying between said liquid crystal display and said eye of said user when said apparatus is being used.

13. A night vision apparatus according to claim 1 wherein positioning means comprises head mounting means configured permit said apparatus to be worn on a user's head so that a portion of said apparatus is positioned adjacent one eye of the user and so as not to obstruct the eye of said user remote from said image generation means.

14. A night vision apparatus according to claim 8 further comprising a filter arranged to filter any visible radiation emitted by said back light.

15. A night vision apparatus according to claim 1 wherein said positioning means is configured and arranged so that a user can manipulate said apparatus solely by hand.

16. A night vision apparatus according to claim 15 wherein said positioning means comprises a generally cylindrical shaped housing adapted to be manipulated by hand.

17. A night vision apparatus according to claim 16 further including hand grips attached to said generally cylindrical shaped housing to provide enhanced handling and house batteries.